

A REVIEW OF THE FISHES OF THE FAMILY HISTIOPTERIDÆ, FOUND IN THE WATERS OF JAPAN; WITH A NOTE ON TEPHRITIS GÜNTHER.

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In this paper is given an account of the species of fishes, three in number, which represent in Japan the family Histiopteridæ.

Family HISTIOPTERIDÆ.

LONG-NOSED PORGIES OR BOAR-FISHES.

Body deep and compressed, the upper outline forming an unequal curve, the lower nearly straight from the chin to the anal fin, there abruptly angulated. Head relatively low, the profile convex about the eyes, and more or less concave at the base of the projecting snout. Bones of head all covered with rough radiating striae; no spines on head; edge of preopercle and scapular scale sometimes serrulate; no suborbital stay; no scales on head except on cheeks and temporal region. Mouth small, terminal, the jaws about equal; maxillary small, the proximal part more or less slipping under the edge of the bony preorbital, the distal end covered or free; lips sometimes fringed with small barbels; teeth in narrow bands, those of the outer row more or less evenly enlarged; teeth on vomer sometimes present, none on the palatines. Opercles entire, rugose, as is also the shoulder girdle. Gill-rakers short and thick. Eye moderate, the suborbital bones narrow and rugose. Nostrils double, both ovate. Scales rather small, rough ctenoid. Lateral line complete, strongly arched, not extending on caudal fin. Branchiostegals 7. Gill membranes separate, free from the isthmus. Dorsal fin very high, continuous, the soft rays progressively shortened posteriorly, the spines 4 to 14 in number, strong and rough, not depressible in a groove. Anal with 2, 3, 4, or 5 spines, the second enlarged. Soft dorsal long or short; anal rather short, caudal lunate or truncate. Ventrals 1, 5, the spine very strong, the insertion behind that of pectoral fin. Pectoral long, its form not symmetrical, its upper rays longest. Pyloric caeca numerous. Air bladder present, large.

This is a small group of large carnivorous fishes, with rough head, scales, and fins, its members differing considerably among themselves.

It is one of the many offshoots of the Serranidae, and stands not far from the Lutianidae and the Hæmulidae, from both of which it differs in the bony opercle. It is also allied to the Priacanthidae, from which it differs in the same and in other characters.

The known species are all strongly marked and each might constitute a distinct genus. They are rare in Japan, but when found are valued as food. One of these species is well figured by Schlegel and all three are very well represented by Steindachner and Döderlein. In the following analysis all the known genera of Histiopteridae are included:

KEY TO GENERA.

- a. HISTIOPTERINÆ. Base of soft dorsal much longer than that of spinous dorsal; dorsal spines 4 to 7; anal spines 2 or 3; no teeth on vomer or palatines; chin sometimes with a brush of barbels. Dorsal rays about IV, 28.
 - b. Dorsal spines 4; anal spines 3; soft dorsal very long and high, but not falcate.
 - c. Third dorsal spine greatly elevated, longer and stronger than fourth; and nearly as long as soft rays; Japan (*typus*).....*Histiopterus*, 1
 - cc. Third dorsal spine relatively low; much shorter than fourth; which is much lower than soft dorsal. Japan (*acutirostris*)*Eristias*,^a 2
 - bb. Dorsal spines 6 or 7, stout, graduated.
 - d. Anal spines three; soft dorsal very high, falcate; of 26 rays. Australia (*eleatus*; type).....*Zanclistius*^a
 - d. Anal spines two; dorsal spines seven, the fourth longest and very high; soft dorsal low and short. (D. VII, 17) Australia (*labiosa*; *farnelli*).
Richardsonia Castelnau
- aa. QUINQUARIINÆ. Base of soft dorsal much shorter than spinous dorsal, the latter with 10 to 14 spines; anal spines 3, 4, or 5; soft dorsal with 10 to 13 rays; teeth usually present on vomer.
 - e. Anal spines 5; dorsal spines 11 or 12; the soft rays about 15; teeth on vomer—Japan; Cape of Good Hope (*japonicus*, *capensis*). *Quinquarius*,^a 3
 - ee. Anal spines 4;
 - f. Dorsal spines 14. Cape of Good Hope (*richardsoni*; type)..*Gilchristia*^a
 - ff. Dorsal spines 10. Pacific Ocean (*decacanthus*; type).....*Quadrarius*^a
 - eee. Anal spines three; dorsal spines 10. Anterior profile nearly straight, Australia (*recurvirostris*).....*Pentaceropsis* Steindachner

1. HISTIOPTERUS Schlegel.

Histiopterus SCHLEGEL, Fauna Japonica, Poiss., 1843, p. 86 (*typus*).

This genus is characterized by the deep body, suggesting the form of *Chætodon*, the bony head, with projecting jaws, provided with minute barbels, and the sail-like dorsal fin, in which there are four spines, the first two short, the third very long and strong; almost as long as the first soft rays and the fourth, slender and somewhat shorter. Anal spines strong, the second longest and strongest, anterior profile of head relatively even. End of maxillary not covered by preorbital; no teeth on vomer.

(ἰστίον, sail; πτερόν, fin.)

^a These generic names, *Eristias*, *Zanclistius*, *Quinquarius*, *Gilchristia*, and *Quadrarius*, are here used for the first time. *Gilchristia* is named for Dr. J. D. F. Gilchrist, naturalist, of Cape Colony.

1. HISTIOPTERUS TYPUS Schlegel.

MATODAI (TARGET PORGY), HIDARI MAKI (LEFT-HANDED TWIST).

Histiopus typus SCHLEGEL, Fauna Japonica, Poiss., 1843, p. 86, pl. XLV (Nagasaki).—STEINDACHNER and DÖDERLEIN, Fische Japans, II, 1883, p. 11, pl. II, fig. 2 (Tokyo, Yokohama).—ISHIKAWA and MATSUURA, Prel. Cat., 1897, p. 58 (Katsuura, Kagoshima).—SMITH and POPE, Proc. U. S. Nat. Mus., XXXI, 1906, p. 479 (Kochi).

Habitat.—Southern Japan, north to Tokyo.

Head $2\frac{1}{2}$ in length, depth $1\frac{2}{5}$, B. 7, D IV, 28, A III, 10. Scales 60; eye 4 in head. Anterior profile of head steep and moderately even, the snout projecting. Gill rakers 4 + 14, short and thick, the arch rounded without distinct angle.

Third dorsal spine highest, a little more than half length of body; fourth spine a little shorter and much more slender; soft dorsal much elevated but not falcate, $1\frac{2}{3}$ in body. Ventral half length of body, reaching middle of anal; pectoral about as long as head; second anal spine lower and stronger than third, lower than longest soft rays. Lower jaw with short papillæ on lower side of each ramus. Color dark olive, with about four faint oblique pale cross bands, about one-third width of interspaces. Fins blackish, the pectoral pale with a dark cross shade at its base.

This species is rare in Japan. We have a specimen from Misaki only. It reaches a length of about a foot. Our specimen agrees well with the above account, which is condensed from Steindachner's description.

(*τύπος*, type.)

2. EVISTIAS, new genus.

This genus differs from *Histiopus* mainly in the form of its spinous dorsal. The spines, four in number, are very stout and of graduated length, the fourth being little more than half the length of the highest soft rays, which are very high, but not falcate. Anal spines three, the second largest, the third longest. Anterior profile of head very irregular, the orbital region and the snout and jaws very prominent. End of maxillary not covered by preorbital; no teeth on vomer.

(*εἶς*, well; *ιστίον*, sail, for dorsal fin.)

Type of the genus.—*Evistias acutirostris*.

2. EVISTIAS ACUTIROSTRIS (Schlegel).

TEGUDAI^a (GOBLIN-PORGY).

Histiopus acutirostris SCHLEGEL, Fauna Japonica, Poiss., 1843, p. 88 (Nagasaki).—STEINDACHNER and DÖDERLEIN, Fische Japans, 1883, p. 12, pl. III (Tokyo).—ISHIKAWA and MATSUURA, Prel. Cat., 1897, p. 58 (Tokyo).

^aTegu (pronounced Tengu) in Japanese mythology is a comical semideity or goblin with a very long nose.

Habitat.—Southern Japan, north to Tokyo.

Head $3\frac{1}{5}$ in length; depth $1\frac{1}{5}$, B. 7, D IV, 29, A III, 13, scales 62. Eye $3\frac{2}{5}$ in head, snout (obliquely measured) $2\frac{1}{5}$. Anterior profile very irregular, the snout and interorbital region very prominent; preorbital very deep. Gill rakers very short and thick, 4 + 16. Dorsal spines stout, graduated, the third about half the fourth, which is a little shorter than head and a little more than half the first soft ray, which is $\frac{1}{3}$ to $\frac{1}{4}$ longer than head; soft rays progressively shortened, the outer edge of the fin slightly convex. Caudal lunate; anal spines stout, the second very strong, a little shorter than third, both much shorter than the soft rays; pectoral and ventral each about as long as head.

Color olive, with six blackish cross bands about as wide as the interspaces, the first at the nape reaching to the eye; the second including first three dorsal spines, base of pectoral, and whole of ventral fin; the third and widest just before vent; the fourth involving base of anal spines; the fifth curved along base of soft dorsal and anal; the fourth narrow, on caudal peduncle. Fins, except ventral and base of pectoral, pale.

This species reaches a length of about 20 inches. It is known as Tegudai, "Snouty Porgy." We have one large specimen, from the market of Yokohama, taken outside the heads, about Awa. It agrees well with Steindachner's account, condensed above.

(*acutus*, sharp; *rostrum*, snout.)

3. QUINQUARIUS, new genus.

Pentaceros CUVIER and VALENCIENNES, Poiss., 1829, III, p. 30 (*capensis*). (Not of Schultze, 1760, a genus of Starfishes).

Body oblong, compressed, pointed anteriorly, the profile not very irregular; dorsal fin with 11 or 12 spines, and 12 to 14 soft rays, the base of the spinous dorsal much longer than that of the soft part; dorsal spines strong, the third longest, the last one a little lower than the soft rays. Anal spines five, the second longest, the last one lower than the soft rays, which are about 9 in number; caudal lunate; pectorals and ventrals long. Scales moderate, firm. Cheeks scaly, bones of head rugose. No teeth on vomer or palatines. Eye large.

(*quinque*, five, from the number of anal spines.)

Type of genus.—*Quinquarius japonicus*.

3. QUINQUARIUS JAPONICUS (Döderlein).

TSUBODAI (BOTTLE-MOUTH PORGY).

Pentaceros japonicus DÖDERLEIN, in Steindachner and Döderlein, Fische Japans, II, 1882, p. 8, pl. v, figs. 1 and 2 (Tokyo).

Habitat.—Southern Japan.

Head, $2\frac{3}{5}$ in length; depth, $1\frac{5}{8}$. B. 7. D. XI, 14. A V, 9. Scales, 47 to 49. Eye, 3 in head. Anterior profile nearly straight, the snout pointed. Third dorsal spine, $1\frac{1}{2}$ in head; soft dorsal rounded, its longest rays about 3 in head. Second anal spine, $2\frac{1}{2}$ in head; soft anal rounded. Color, shining silver gray; paler below ventrals blackish Döderlein).

The species is known from two specimens, 19 to 21 cm. in length, found in the market of Tokyo by Doctor Döderlein. It is probably from Misaki or Awa, outside the heads.

SUMMARY.

1. *Histioporus* Schlegel 1843.

1. *typus* Schlegel, 1843; Misaki.

2. *Eristias* Jordan 1907.

2. *acutirostris* (Schlegel), 1843; Yokohama.

3. *Quinquarius* Jordan 1907.

3. *japonicus* (Döderlein), 1882.

NOTE ON *TEPHRITIS* OR *VELIFRACTA*.

I may here note that the name *Tephritis* Günther (1862), applied to a genus of Chinese flounders, is preoccupied among flies (*Tephritis* Fabricius 1794). The genus of flounders may be named *Velifracta*, using a term applied by Richardson to the type-species, *Velifracta sinensis* (Lacépède). A good figure of this species is published by Jordan and Seale, in Proc. Davenport Acad. Sci., X, 1905, pl. xi.